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Studying the Correlation between Dignity and Functional Independence in the Elderly in Tehran in 2020

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Abstract

Introduction: As the elderly population continues to grow, numerous challenges were faced in enhancing their quality of life. Maintaining dignity and functional independence are crucial factors during this stage of life. This study was conducted to determine the correlation between dignity and functional independence during the elderly period.

Methods: A descriptive-correlational study was conducted, involving 263 elderly residents from four regions of Tehran, using a multi-stage stratified sampling approach. The study utilized daily activity questionnaires, instrumental activities of daily living questionnaires, and elderly dignity questionnaires using a 5-point Likert scale, demographic questionnaires and cognitive screening tests for data collection. Descriptive and analytical statistical tests, such as the Pearson correlation coefficient and multiple linear regression using SPSS21 software, were used for data analysis.

Results: The participants' average age was 68.4 ± 2.7 years, and the majority (71.9%) reported a moderate level of dignity. Only 26.6% were fully independent in performing daily activities, and 17.5% were fully independent in instrumental activities. The results have confirmed the significant impact of functional independence and health on the dignity of older adults (P<0.001). Furthermore, the multivariate regression results showed that healthy elderly individuals had an average dignity score 4.39% points higher than that of sick elderly individuals.

Conclusions: Based on these findings, elderly individuals who rely on others to perform their tasks express a lower level of dignity. Therefore, it is essential to focus on the concept of independence and develop and educate programs to maintain functional independence. These efforts can significantly improve dignity in the elderly, leading to an increase in their quality of life and satisfaction.

INTRODUCTION

The aging population has become one of the largest age groups worldwide due to a desire for longer life and decreased fertility rates [1]. By 2050, it is predicted that 32% of the population in developed countries and 19% in developing countries will be elderly [2]. Iran is not an exception, with a projected fivefold increase in the population of individuals aged 60 and over by 2050 [3]. Addressing the challenges associated with this phenomenon and adopting suitable policies to enhance the physical, mental, and social status of the elderly, enabling them to experience healthy and active aging, is crucial [4]. It is important to note that aging is not only a biological fact but also a cultural reality, tied to the

characteristics of society and the individual's position and status within that society [5].

Given the declining physical and cognitive health that often accompanies old age, including increased susceptibility to chronic illnesses, impaired mobility, and dementia, dignity, an inherent truth and ethical need of human beings, is a fundamental pillar of health in old age [6]. Maintaining dignity and self-worth in the face of health challenges is critical for the wellbeing of the elderly. Dignity is divided into absolute and relative categories. Absolute dignity is a divine dignity for all humanity, and humans are equal in it [7]. Relative dignity, on the other hand, reflects human dignity and is contingent on environmental factors such as occupation, social status, and physical and mental health status, constantly changing in response to various factors [8, 9]. To determine whether an elderly person retains their dignity, they must be able to make decisions, interpret information accurately, feel good physically and mentally, and possess the power to control their circumstances [10].

Physical condition, especially in seniors who have lived for several decades, is one of the factors that influence the concept of dignity. Their physiological and functional abilities decline, affecting neurological, cognitive, skeletal-muscular performance [11]. Dependence on others unintentionally labels the elderly as disabled, leading to feelings of worthlessness, burden, and loss of respect. Consequently, self-confidence, social isolation, and physical and mental health weaken [12, 13]. Therefore, maintaining the physical and functional independence of the elderly until death is integral to their overall health [14]. Functional independence refers to an individual's capacity to perform safe and independent physical function regardless of other people, requiring a complex interplay of physical, psychological, and social aspects such as physical capacity, coping ability, empowerment, and health literacy [15]. Maintaining the independence of the elderly is the first step in achieving a better quality of life for this age group [16].

Previous studies have discussed the impact of dignity and functional independence and related factors on the elderly. For example, Sao Jose (2016) investigated 24 elderly people receiving home care in Portugal and found that social relationships, a good relationship between the elderly and their caregivers, as well as physical, mental, and social activity, have a significant impact on preserving their dignity [17]. Dong et al (2021) conducted research on 253 elderly residents of three long-term care centers in China and discovered that elderly people with low economic status, chronic disease, and less physical ability and living in rural areas before entering care facilities were at higher risk of losing their dignity [18]. Bastani et al (2018) evaluated Tehran's elderly who referred to health centers and reported that about 95.5% of the elderly had the ability to perform their daily activities independently. Factors such as the death of a spouse, lower literacy levels, and hypertension and joint diseases caused their dependence on others [19].

Most previous studies in this field have been conducted on sick or hospitalized samples, with fewer independent studies on the relationship between dignity and functional independence in healthy elderly individuals. Therefore, the present study aimed to examine the status of dignity and functional independence and the correlation between these two concepts in the elderly population of Tehran in 2020.

METHODS

This study involved 263 elderly residents of Tehran, age 60 or older, who were mentally alert, proficient in Persian language, and able to answer questions.

This descriptive-correlational study recruited 263 Tehran residents aged 60+ between 2019-2020 with intact cognition and Persian fluency. Participants were approached in four municipal parks - Mellat, Al-Qadir, Al-Mahdi, and Narmak - commonly visited by seniors. Contacting elderly at familiar public recreation sites enabled engagement of a representative community-dwelling urban sample. Participants also had to obtain a minimum score of 7 on the Cognitive Dignity Questionnaire (AMTS) to meet inclusion criteria. Exclusion criteria included lack of concentration necessary for understanding and responding to questions and unwillingness to participate in the study.

Multi-stage stratified sampling was used, where Tehran city was divided into four regions: North, South, East, and West. Two parks were randomly selected from each region, and eligible elderly individuals were enrolled in the study in each park based on their availability and entry criteria.

The sample size was calculated using the formula $N \geq \left[\frac{z_{\alpha} + z_{1-\beta}}{0.5 \times \ln\left[\frac{(1+r)}{1-r}\right]}\right] + 3$, considering a type 1 error rate of 0.05, a power of 0.80, and a standard deviation of 0.2 Without considering sample loss, a minimum of 263 participants were obtained (14). Data were collected through face-to-face interviews using four instruments: a sociodemographic questionnaire, the Abbreviated Mental Test Score (AMTS), the Elderly Dignity Concept Questionnaire, and the Functional Independence Measure (FIM). The sociodemographic questionnaire collected data on age, gender, marital status, family composition, level of education, income level, type of health insurance, and chronic illnesses.

The short cognitive assessment test AMTS, which was first designed by Hodkinson, consists of 10 questions, each worth one point. Scoring 7 or lower on this test indicates the presence of cognitive impairment in an

individual [20]. This questionnaire has been validated in Iran by Bakhtiari et al. and its reported psychometric properties (sensitivity = 99 percent, specificity = 85 percent, and Cronbach's alpha = 0.905) indicate that it is a reliable and valid instrument for use in this population [21].

The Elderly Dignity Concept Questionnaire by Nouri et al measures elderly individuals' perceptions of their dignity and consists of 40 items categorized into roles and responsibilities, family and social relationships, self-worth, autonomy, and independence and coherence. Each item is ranked on a five-point Likert scale, with scores interpreted as follows: scores ≤ 66.6 indicate low dignity, scores between 133.2 - 66.7 indicate moderate dignity, and scores above 133.2 indicate high dignity. The internal consistency of this tool was confirmed by Nouri et al (2014) with a Cronbach's alpha coefficient of 0.91 and an intraclass correlation coefficient of 0.86 [22].

The FIM consists of two questionnaires: the Activities of Daily Living (ADL) questionnaire with seven questions and the Instrumental Activities of Daily Living (IADL) questionnaire with nine questions. For ADL, sensitivity and specificity values of 75% and 96% were obtained. For IADL, sensitivity reached 71% with a specificity of 77%. Both questionnaires were validated by Taheri and Azadbakht, with content validity indices exceeding 0.82, and Cronbach's alpha coefficients exceeding 0.75 [23].

The Independence Assessment Tool measures the level of independence of elderly men and women in performing daily activities across a three-level Likert scale, with scores ranging from 0 to 2 for each category. The questionnaire's score range for daily life activities is between 0 and 14 (final score: 0 to 6 dependent, 7 to 10 slightly dependent, 11 to 14 independent). The score range for the Instrumental Activities of Daily Living questionnaire is also between 0 and 18 (total score: 0 to 8 dependent, 9 to 13 semi-dependent, 13 to 18 independent).

Participants were informed about the confidentiality of their information and their voluntary participation in the study before enrollment. Data were analyzed using SPSS21 software, and quantitative data were analyzed using descriptive statistics, Pearson correlation coefficient, and multiple linear regression. A significance level of $p<0.05$ was considered statistically significant.

RESULTS

In the end, 263 elderly residents who visited parks in Tehran were examined in this study. Of the total participants, 147 (55.9%) were female and 169 (64.3%) were male, mostly between the ages of 60 and 69 other demographic characteristics of the study subjects are reported in Table 1.

The data presented in Table 2 reveals the mean and standard deviation of the elderly's dignity and its dimensions. It was found that 189 (71.8%) of the participants reported their dignity as moderate, while 72 (27.4%) reported high dignity, and only 7.6% reported low dignity. Independence and coherence were the dimensions that received the highest scores among the five dignity dimensions. The functional independence of the elderly was evaluated, and the results are shown in Table 3. Out of all participants, only 26.6% had independence in their daily activities, while 17.5% had independence in instrumental activities. Feeding was the daily activity with the highest independence score, with 228 (86%) participants, while the lowest score was related to walking, with 195 (74.1%). Using the telephone, with 232 (88%) participants, was the most independent instrumental activity, while traveling relatively long distances by bus, taxi, or other means of transportation was the least independent, with 181 (68.8%).

The correlation between the elderly' dignity and their functional independence was analyzed using a Pearson correlation test. The results showed a direct correlation between the two variables, which was statistically significant ($p<0.001$). Multiple regression analysis was also carried out, and the results are presented in Table 4.

Table 1. Demographic characteristics of the samples

Demographic Factors	Frequency (Percentage)	Demographic Factors	Frequency (Percentage)
Age(years)		**Income Status**	
69-60	169(64.3)	No income	34(12.9)
79-70	66(25.1)	children	30(11.4)
90-80	28(10.6)	retired	169(64.5)
Gender			
Male	115(44.1)	employed	23(8.7)
Female	147(55.9)	Relief foundation	7(2.7)
Marital Status		**Insurance type**	
Single	1(0.4)	No insurance	16(6.1)
Widowed	71(27)	The Armed Forces	35(13.3)
Married	174(66.2)	Iran Health Insurance	45(17.1)
Divorced	17(6.5)	Social Security	155(58.9)
Living status			
With children	88(33.5)	other	12(4.6)
		Having an illness	
With spouse	109(41.5)	yes	178(67.7)
Alone	58(22.1)	no	84(31.9)
With relatives	8(3)		

Table 2. Mean and standard deviation of dignity and functional independence of the elderly under study, and their dimensions

The dignity of the Elderly				Functional Independence			
Dignity dimensions (minimum and maximum score)	The lowest score	The highest score	Mean (standard deviation)	variable	Minimum	Maximum	Mean (standard deviation)
Roles and responsibilities (12-60)	12	45	32.66±5.48	Daily activities Score range(0-14)	2	13	8.04±2.41
Family and Social Relations (7-35)	11	30	24.07± 3.66	Instrumental activities Score range(0-16)	4	16	10.07± 3.04
Self-esteem (9-40)	13	38	28.21± 4.85	Total score of functional independence (0-30)	9	26	18.16 ±4.09
Authority (4-20)	4	18	9.75± 3.55				
Independence and Cohesion (7-35)	17	33	27.5± 3.80				
Total Dignity Score (200-40)	67	150	122.22 ±15.59				

Table 3. Correlation between mean dignity score and functional independence in the elderly under study

Functional independence	Dignity					
	Roles and responsibilities	Family and Social Relations	Self-esteem	Authority	Independence and Cohesion	Total Dignity Score
Daily activities						
Pearson correlation coefficient	0.51	0.52	0.50	0.39	0.36	0.61
P- value	0.001	0.001	0.001	0.001	0.001	0.001
Instrumental activities						
Pearson correlation coefficient	0.51	0.50	0.48	0.47	0.36	0.62
P- value	0.001	0.001	0.001	0.001	0.001	0.001
Total score						
Pearson correlation coefficient	0.56	0.58	0.55	0.52	0.39	0.70
P- value	0.001	0.001	0.001	0.001	0.001	0.001

Table 4. The results of a multi-variable regression test on the correlation between status (dependent variable) and functional independence (independent variable) in the elderly under study

Model	Non-Standard Coefficient (B)		Standard Coefficient b	T-Statistics	P-Value
	Estimate	Standard Error	Estimation		
Fixed effect	80.52	3.19		25.19	0.001
Daily function	4.22	0.68	0.65	6.15	0.001
Instrumental function	3.89	0.72	0.76	5.35	0.001
Functional independence	1.74	0.75	0.45	2.29	0.02

It was found that there is an increase of 1.85 units in the average score of the elderly's dignity for every one-unit increase in the score of functional independence. Furthermore, the average dignity score of sick elderly individuals was found to be 4.39 units lower than that of healthy elderly individuals.

DISCUSSION

The present study investigated the correlation between dignity and functional independence. The elderly possess an essential mental and ethical experience known as dignity that can be influenced by their relationships with others. Essentially, dignity is a mutual connection between an individual's abilities and capabilities and their current circumstances [24]. Enhancing the dignity of the elderly can benefit their mental health, which subsequently leads to an improvement in their quality of life, self-esteem, and sense of worth. By meeting their needs during this stage of life, the elderly can accept their roles and responsibilities better, thereby complying with the limitations that come with old age [25].

The majority (71%) of the elderly individuals surveyed in this study showed a moderate level of understanding of dignity in all five dimensions and areas. These findings are consistent with those of Hosseini et al's study (2019) in Sirjan city [26]. However, Moradoghli et al's study (2022) showed that most participants faced problems regarding their dignity [27]. This may be due to differences in the sampling location and conditions of the samples, as some were healthy, while others were patients. On the other hand, Dong et al's study (2021) revealed desirable scores of dignity among Chinese elderly people living in care centers. Their highest score of dignity was obtained in the area of caregiving performance [18]. This desirable level of dignity may be attributed to the elimination of sick elderly individuals and the provision of proper and ethical care services to the elderly. The dimensions of independence and coherence had the highest scores in this study, which is in line with Kinnear et al.'s qualitative study (2016) on

72 elderly English individuals. Their research showed that dignity means respect for human rights, independence, and coherence from the perspective of the elderly [28].

Most elderly individuals (mean age 68.4 ± 2.7) reported a need for some dependency in performing daily tasks (49%) and instrumental activities (50%). The rate of complete independence in daily activities was 26.6%, while it was 17.5% in instrumental activities. Cwirlej et al's study (2018) in Poland revealed that only 21.27% of elderly participants (mean age 76.6 ± 2.9) were not dependent on others for daily performance. This indicates that increasing age in Polish elderly individuals leads to an increase in the inability to perform daily activities [29]. Similarly, do Carvalhal et al's study (2019) observed that more than 60% of Brazilian elderly individuals (mean age 78.7 ± 2.9) had an average to complete lack of independence [30]. However, Bastani et al's study (2019) indicated about 95.5% of independence in performing daily activities among Tehranian elderly individuals (mean age 64.53 ± 3.95) [31]. A study on over 31,000 Indian elderly individuals (mean age 68.2 ± 8.6) also showed 78% functional independence in performing daily tasks and 52% independence in instrumental activities [32]. The difference in methodological approaches, including the use of different tools to examine functional independence, the classification of scores into two spectra of independence and dependence, and differences in the educational level and skills of the samples, led to conflicting results in the level of functional independence among elderly individuals.

In this study, it was found that the elderly demonstrated the highest level of independence when it came to eating and using the phone, which is consistent with the findings of Tavafian et al's study in 2014 [33]. To promote functional independence and create a sense of independence in the elderly, it is recommended that they engage in physical activity, mental exercises, and learn how to use new tools [34].

A significant finding in this research is that functional independence has a direct and positive impact on the perceived dignity of the elderly. With each increase in the score indicating their ability to perform independent activities, their level of perceived dignity improves by 1.85 units. Studies have shown that illness and disability can compromise feelings of dignity in individuals as it undermines their sense of autonomy and leads to dependence on others. A study by Persson et al (2020) in Sweden showed that in terminally ill patients, a sense of dependency was associated with a decrease in respect and dignity [35]. Elderly individuals consider life to be dignified when they do not need anyone's help to carry out personal affairs [36, 37], and those who have lost their independence tend to suffer from depression and a lack of self-confidence [38].

Based on the findings of this study, it is evident that sick elderly individuals have an average dignity score that is 4.39 units lower than their healthy counterparts. Several studies have shown that people who suffer from disabilities or illnesses - whether physical or mental - experience compromised feelings of dignity due to their dependence on others and a lack of autonomy. This can be so extreme that the individual may wish for death. As professionals, it is important to recognize and address these issues in order to improve the quality of life for these individuals [7, 18, 39].

It is important to note that the data in this study was collected through self-reporting, which may increase the likelihood of incomplete or inaccurate responses. However, researchers minimized this limitation by guiding the elderly, creating a calm environment, and allowing enough time for them to answer the questions completely. Dignity and functional independence are related to demographic characteristics, and therefore, the results of this study may not be generalizable to other populations.

CONCLUSIONS

The elderly have a fundamental need for their human dignity to be respected, which should be a top priority for those providing services to this vulnerable group. It is crucial to preserve their independence and functional abilities, as this promotes their status and dignity, leading to improved mental health and an enhanced quality of life. Policymakers, health caregivers, and family members of the elderly must consider this influential notion when planning and creating suitable conditions for the development of elderly individuals' abilities. Furthermore, family members play a significant role in supporting and preserving the independence and dignity of the elderly. Therefore, health authorities should plan educational programs for families with elderly individuals to provide much-needed support. A professional approach is necessary to address this critical issue.

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ETHICAL CONSIDERATION

This research is based on a master's thesis in nursing from Shahid Beheshti University of Medical Sciences with ethics code IR.SBMU.PHARMACY.REC.1399.119.

AUTHOR'S CONTRIBUTIONS

Elnaz Goodarzi: researcher, data gatherer, data analyzer.
Roghaye Esmaeili: supervisor, result reviser
Bouzaripour: supervisor, consultant

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest in this study.

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